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MONTANA WATER SUPPLY OUTLOOK

Snowpack and Streamflow Forecasts as of May 15, 1983

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The Montana Water Supply Outlook is a publication of the U.S. Soil Conservation Service. The SCS administers the Cooperative Snow Survey Program in cooperation with other federal, state and private agencies, organizations, and individuals.

The report is prepared by SCS, Snow Survey and Water Supply Forecast Staff, P.O. Box 98, Bozeman, Montana.

FEDERAL STATE PRIVATE
COOPERATIVE SNOW SURVEYS
Furnishes the basic data necessary for forecasting water supply for irrigation domestic and municipal water supply hydro electric power generation navigation mining and industry
The conservation of water begins with the snow survey

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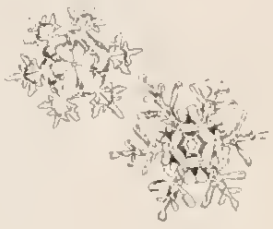
Springtime in Montana

The central and north central mountains received considerable moisture in the last 15 days. Most moisture was associated with the May 9th and 10th storm. Much low elevation and nearly all high elevation precipitation fell as snow. Estimated snowfall at higher elevations amounted to 3 to 4 feet from this storm. Winds associated with this storm caused blowing and drifting snow problems. The following precipitation amounts were reported by SNOTEL.

Total Precipitation 5/1-5/15/83

SNOTEL Site	Elevation	Drainage	Precipitation (Inches)
Badger Pass	6900	Teton-Marias-Sun	4.3
Boulder Mountain	7950	Missouri Main Stem	1.8
Copper Bottom	5200	Clark Fork	3.4
Copper Camp	6950	Clark Fork	3.8
Crystal Lake	6100	Judith	5.9
Deadman Creek	6450	Missouri Main Stem	1.6
Frohner Meadow	6480	Missouri Main Stem	2.5
Lubrecht Flume	4680	Clark Fork	2.3
Many Glacier	4960	St. Mary	1.5
Mount Lockhart	6400	Teton-Marias-Sun	4.3
Nevada Creek	6480	Clark Fork	5.0
North Fork Elk Creek	6250	Clark Fork	3.7
Pickfoot Creek	6650	Missouri Main Stem	1.3
Porcupine	6500	Upper Yellowstone	4.2
Rocker Peak	8000	Jefferson	2.8
Spur Park	8100	Judith	2.3
Waldron	5600	Teton-Marias-Sun	4.3
Warm Springs	7800	Clark Fork	4.0
Wood Creek	5960	Teton-Marias-Sun	3.3



Snowmelt delayed by cooler temperatures

Cool temperatures in the State around May 6th and 7th, slowed snowmelt at lower elevations and stopped melt at higher elevations. Heavy snow fell in the central and north central mountains from the 8th to 11th. This area had an extremely low snowpack on May 1, but received 2 to 4.5 inches of high elevation snow water equivalent. The snowfall, accompanied by wind, caused problems in many valley locations in north central and eastern Montana. Moisture received was needed and appreciated.

The May 15 snowpack water content showed very little change from that measured around May 1. Reduced melt and additional snowfall resulted in an increase in snowpack percent of average as compared to the May 1 percent of average. Snow pillow data from SNOTEL reports indicates that new snow exceeded melt at most high elevation sites. Many high elevation snow pillows show the highest snow water equivalent of the season as of May 16.

Specific forecasts are not issued May 15 but the moisture received in May will probably increase streamflow forecasts in central and north central Montana by 5 to 10 percent. Other area forecasts remain about the same as May 1.

Peak flows may be delayed and could be slightly higher than projected on May 1. Low elevation streams not peaking before the cool, stormy weather will do so as soon as weather warms. Most major streams are still expected to reach peak snowmelt runoff the last week in May or first week in June, unless cool weather continues into late May.

Additional snow surveys will be made near June 1 at higher elevation snow courses and combined with data from SNOTEL sites to assess progress of mountain snowmelt and moisture conditions.

ADENCIES AND ORDANIZATIONS COOPERATIND IN MONTANA SNOW SURVEYS

GOVERNMENT AGLNCIES
- Canada
  - Department of the Environment
    - Atmospheric Environment Service
    - Water Management Service
  - British Columbia Ministry of Environment
    - Inventory and Engineering Branch, Hydrology Section
  - Alberta Environment
    - Technical Services Division
- Federal
  - Department of the Army - Corps of Engineers
  - Department of Agriculture - Forest Service
  - Department of Agriculture - Soil Conservation Service
  - Department of Commerce - National Environmental Satellite Service
  - Department of Commerce - National Weather Service
  - Department of Interior - Bureau of Indian Affairs
  - Department of Interior - Fish and Wildlife Service
  - Department of Interior - Geological Survey
  - Department of Interior - National Park Service
  - Department of Interior - Bureau of Reclamation
  - Department of Energy - Bonneville Power Administration

STATE AGENCIES
- Montana Conservation Districts
- Montana Department of Fish, Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana State University - Agricultural Experiment Station
- University of Montana - School of Forestry

PRIVATE ORGANIZATIONS
- The Anaconda Company
- Big Sky of Montana
- Butte Water Company
- Flathead Valley Community College
- Montana Power Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

SNOW SURVEY DATA

SNOW May 15, 1983

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR Date of Survey	Snow Depth (inches)	Water Content (inches)	PAST RECORD Water Content (inches) Last Year	Average
ARCH FALLS	7350	5/12	38	11.1	-	14.7
BADGER PASS	6900	5/13	79	32.2	53.1	45.0
BADGER PASS PILLOW	6900	5/13	SP	30.8	48.4	-
BANFIELD MOUNTAIN	5600	5/12	42	20.2	29.8	16.9
BANFIELD MOUNTAIN PILLOW	5600	5/12	SP	17.9	24.1	14.3
BAREE CREEK	5500	5/12	93	40.5	52.8	41.5
BAREE MIDWAY	4600	5/12	57	24.2	35.1	25.0
BAREE TRAIL	3800	5/12	0	.0	.0	0.0
BARKER LAKES PILLOW	8250	5/15	SP	19.9	19.4	-
BASIN CREEK	7180	5/13	41	12.4	13.9	6.1
BASIN CREEK PILLOW	7180	5/15	SP	12.6	14.1	-
BEAGLE SPRINGS	8850	5/15	EST	10.6	14.5	-
BEAGLE SPRINGS PILLOW	8850	5/15	SP	9.5	12.5	-
BLACK BEAR	7950	5/15	EST	46.5	55.0	41.4
BLACK BEAR PILLOW	7950	5/15	SP	39.4	50.8	36.0
BLACK PINE PILLOW	7100	5/15	SP	10.4	16.2	12.4
BLUE LAKE	5900	5/13	44	18.7	34.6	21.3
BOTS SOTS	8000	5/16	34	11.8	4.6	10.4
BOULDER MOUNTAIN	7950	5/15	EST	22.0	26.1	-
BOULDER MOUNTAIN PILLOW	7950	5/15	SP	23.9	30.7	-
BOX CANYON	6670	5/15	EST	3.4	6.5	-
BOX CANYON PILLOW	6670	5/15	SP	1.9	3.8	-
BRIDGER BOWL	7250	5/13	87	29.6	32.6	31.1
BRIDGER BOWL PILLOW	7250	5/13	SP	28.3	31.3	29.2
CALVERT CREEK	6450	5/15	EST	.8	2.0	-
CALVERT CREEK PILLOW	6450	5/15	SP	.0	0.7	0.0
CAMP SENIA	7890	5/16	35	11.6	4.1	10.6
CARROT BASIN	9000	5/15	EST	33.6	54.6	43.6
CARROT BASIN PILLOW	9000	5/15	SP	28.9	42.0	-
CASHE CREEK PILLOW	7800	5/15	SP	10.2	12.6	-
CLOVER MEADOW	8600	5/15	EST	19.7	25.0	-
CLOVER MEADOW PILLOW	8600	5/15	SP	15.0	22.6	-
COLE CREEK	7850	5/17	77	28.0	19.5	22.4
COLE CREEK PILLOW	7850	5/17	SP	26.8	17.4	20.9
COMBINATION PILLOW	5600	5/15	SP	.1	.0	1.1
COOKE STATION	8150	5/18	46	19.7	-	20.9
COPPER BOTTOM	5200	5/15	EST	.0	2.0	-
COPPER BOTTOM PILLOW	5200	5/15	SP	1.3	4.6	0.5
COPPER CAMP	6950	5/15	EST	22.8	32.5	-
COPPER CAMP PILLOW	6950	5/15	SP	24.7	39.0	31.5
COPPER MOUNTAIN	7700	5/16	36	11.8	14.9	8.4
CRYSTAL LAKE	6100	5/15	EST	6.5	10.5	-
CRYSTAL LAKE PILLOW	6100	5/15	SP	6.7	7.2	-
DALY CREEK PILLOW	5780	5/15	SP	1.6	8.2	-
DARKHORSE LAKE PILLOW	8600	5/15	SP	23.6	37.0	-
DEADMAN CREEK	6450	5/15	EST	1.5	7.0	4.6
DEADMAN CREEK PILLOW	6450	5/15	SP	.6	6.3	2.9
DEVILS SLIDE	8100	5/12	80	26.1	-	28.7
DISCOVERY BASIN	7050	5/12	37	10.0	13.6	8.6
DIVIDE	7900	5/15	EST	11.4	13.5	7.3
DIVIDE PILLOW	7900	5/15	SP	11.7	16.6	7.6

SNOW May 15, 1983

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR Date of Survey	Snow Depth (inches)	Water Content (inches)	PAST RECORD Water Content (inches) Last Year	Average
EAST BOULDER S	9250	5/14	81	31.0A	39.0	35.2
EMERY CREEK PILLOW	4350	5/15	SP	6.2	5.0	-
FISH CREEK	8000	5/13	52	16.2	17.0	10.2
FISHER CREEK	9100	5/18	89	37.2	48.0	45.6
FISHER CREEK PILLOW	9100	5/18	SP	34.1	44.2	43.1
FLATTOP MOUNTAIN PILLOW	6300	5/15	SP	42.1	49.5	52.2
FOURTH OF JULY	3450	5/17	0	.0	.0	-
FRIDAY HILL	4620	5/17	17	8.6	14.1	-
FROHNER MEADOWS PILLOW	6480	5/15	SP	8.0	9.0	6.9
GARVER CREEK	4250	5/12	0	.0	2.0	0.4
GARVER CREEK PILLOW	4250	5/12	SP	.6	1.5	0.2
GIBBONS PASS	7100	5/19	48	22.6	-	20.8
GRAVE CREEK	4300	5/12	20	9.4	9.4	8.9
GRAVE CREEK PILLOW	4300	5/12	SP	7.4	7.2	2.0
GRIZZLY PEAK	8640	5/17	80	29.9	16.2	23.7
GUNSIGHT LAKE	6300	5/13	75	33.6	50.9	42.6
HAND CREEK	5030	5/15	EST	7.1	7.2	-
HAND CREEK PILLOW	5030	5/15	SP	6.3	7.4	-
HAWKINS LAKE	6450	5/12	71	34.5	42.0	33.0
HAWKINS LAKE PILLOW	6450	5/12	SP	31.9	36.3	31.5
HELL ROARING DIVIDE	5770	5/16	59	27.4	31.2	26.1
HOOD MEADOW	6600	5/12	32	8.6	-	9.6
HOODOO BASIN	6000	5/15	93	44.9	67.0	50.5
HOODOO BASIN PILLOW	6000	5/15	SP	39.3	56.5	46.9
HOODOO CREEK	5900	5/15	88	41.6	60.5	46.2
INTERGAARD	6450	5/16	17	4.8	9.4	7.7
KINGS HILL	7500	5/12	37	10.6	18.2	16.7
KRAFT CREEK PILLOW	4750	5/15	SP	.5	6.6	-
LAKEVIEW RIDGE	7400	5/15	EST	16.0	11.0	-
LAKEVIEW RIDGE PILLOW	7400	5/15	SP	17.0	7.7	-
LEMHI RIDGE	8100	5/15	EST	5.5	9.5	-
LEMHI RIDGE PILLOW	8100	5/15	SP	6.1	12.7	8.1
LICK CREEK	6860	5/12	35	8.7	10.9	7.0
LICK CREEK PILLOW	6860	5/12	SP	7.2	5.4	6.3
LOWER TWIN PILLOW	7900	5/15	SP	27.5	24.5	-
LUBRECHT FLUME PILLOW	4800	5/15	SP	.0	.0	0.0
MANY GLACIER PILLOW	4960	5/15	SP	.0	8.7	-
MAYNARD CREEK	6210	5/13	49	14.0	16.2	11.4
MONUMENT PEAK PILLOW	8800	5/15	SP	22.0	27.7	-
MOULTON RESERVOIR	6850	5/12	20	4.1	6.6	-
MOUNT LOCKHART	6400	5/15	EST	19.0	24.8	22.2
MOUNT LOCKHART PILLOW	6400	5/15	SP	18.7	27.9	23.6
MULE CREEK PILLOW	8350	5/15	SP	17.2	22.5	-
NEVADA CREEK PILLOW	6480	5/15	SP	15.6	18.4	-
NEWTON MOUNTAIN	5600	5/17	81	37.8	41.7	-
NEZ PERCE CAMP	5650	5/15	EST	5.8	11.7	4.7
NEZ PERCE CAMP PILLOW	5650	5/15	SP	6.5	13.0	-
NOISY BASIN PILLOW	6040	5/15	SP	50.1	49.2	39.6
NORTH FK. ELK CREEK	6250	5/15	EST	7.0	11.0	5.4
NORTH FK. ELK CREEK PILLOW	6250	5/15	SP	6.4	11.8	5.5
NORTH FORK JOCKO	6330	5/17	75	35.5	54.3	43.9

SNOW May 15, 1983

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR Date of Survey	Snow Depth (inches)	Water Content (inches)	PAST RECORD Water Content (inches) Last Year	Average
NORTHEAST ENTRANCE	7400	5/17	12	4.2	5.6	5.0
NORTHEAST ENTRANCE PILLOW	7400	5/17	SP	3.7	4.6	4.2
PICKET PIN D	9450	5/14	97	30.0A	31.5	32.8
PICKFOOT CREEK	6650	5/15	EST	1.2	8.2	-
PICKFOOT CREEK PILLOW	6650	5/15	SP	2.6	7.2	-
PLACER BASIN F	8830	5/14	75	23.5A	23.5	25.6
PLACER BASIN PILLOW	8830	5/15	SP	21.6	21.2	-
POORMAN CREEK	5100	5/12	53	25.7	44.4	24.4
POORMAN CREEK PILLOW	5100	5/12	SP	20.3	39.2	24.2
PORCUPINE	6500	5/15	EST	2.2	7.0	-
PORCUPINE PILLOW	6500	5/15	SP	1.9	1.2	-
RED MOUNTAIN	6000	5/18	34	15.9	16.8	15.6
RED TOP	5260	5/17	65	31.0	29.8	-
ROCKER PEAK	8000	5/15	EST	17.1	21.5	16.6
ROCKER PEAK PILLOW	8000	5/15	SP	18.4	22.7	19.0
SADDLE MOUNTAIN	7940	5/15	EST	25.0	30.6	28.7
SADDLE MOUNTAIN PILLOW	7940	5/15	SP	22.9	33.5	29.1
SHOWER FALLS	8100	5/12	82	27.6	34.0	32.5
SHOWER FALLS PILLOW	8100	5/15	SP	29.1	34.6	31.2
SILVER RUN	6630	5/16	0	.0	-	3.3
SILVER RUN PILLOW	6630	5/16	SP	.0	.0	-
SKALKAHO SUMMIT	7260	5/15	EST	22.7	34.8	25.8
SKALKAHO SUMMIT PILLOW	7260	5/15	SP	23.3	36.4	-
SKYLARK TRAIL PILLOW	6200	5/15	SP	25.1	47.0	-
SPOTTED BEAR MOUNTAIN	7000	5/13	10	4.0	13.4	6.3
SPUR PARK	8100	5/15	EST	20.6	27.8	24.3
SPUR PARK PILLOW	8100	5/15	SP	21.3	26.8	23.8
STAHL PEAK	6050	5/12	97	46.9	46.0	41.7
STAHL PEAK PILLOW	6050	5/12	SP	40.2	38.2	34.4
STAR LAKE E	9650	5/14	105	45.5A	54.0	53.3
STUART MOUNTAIN	7400	5/17	80	33.6	37.8	29.2
TEPEE CREEK	8000	5/15	EST	19.9	19.0	16.7
TEPEE CREEK PILLOW	8000	5/15	SP	15.9	17.7	12.7
TIMBERLINE CREEK	8850	5/16	69	23.2	14.6	19.9
TRINKUS LAKE	6100	5/13	84	38.6	52.6	41.4
TV MOUNTAIN	6800	5/17	45	17.6	21.9	18.9
TWELVEMILE CREEK	5600	5/15	EST	.0	6.3	8.4
TWELVEMILE CREEK PILLOW	5600	5/15	SP	.0	13.0	7.2
TWIN CREEKS	3580	5/13	0	.0	3.6	0.0
TWIN LAKES	6510	5/15	EST	33.0	50.5	43.0
TWIN LAKES PILLOW	6510	5/15	SP	32.2	51.5	40.3
UPPER HOLLAND LAKE	6200	5/17	58	25.4	41.4	33.8
WALDRON	5600	5/15	EST	3.0	5.2	1.0
WALDRON PILLOW	5600	5/15	SP	4.2	4.5	3.8
WARM SPRINGS	7800	5/15	EST	21.9	25.8	-
WARM SPRINGS PILLOW	7800	5/15	SP	24.9	30.5	-
WEASEL DIVIDE	5450	5/12	69	32.8	39.8	31.3
WHISKEY CREEK	6800	5/15	EST	16.5	20.6	10.8
WHISKEY CREEK PILLOW	6800	5/15	SP	13.6	17.2	10.4
WHITE MILL	8700	5/18	70	29.0	36.5	32.0
WHITE MILL PILLOW	8700	5/18	SP	25.1	33.3	26.3
WILLOW CREEK	6500	5/17	0	.0	1.3	3.2
WOOD CREEK PILLOW	5960	5/15	SP	5.5	13.0	-

average monthly weather outlook

FOR MID-MAY TO

MID-JUNE 1983

TEMPERATURE

BELOW

NORMAL

ABOVE

PRECIPITATION

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